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Water Closets Proposed Standards Pre-Rulemaking Comments

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE), collectively referred to herein as the California Investor-Owned Utilities (CA IOUs), in response to the California Energy Commission pre-rulemaking action regarding water closetsâ€”otherwise known as toilets.

Additional submitted attachment is included below.

February 5, 2025

Jessica Lopez
California Energy Commission
Docket Unit, MS-4
Docket No. 22-AAER-05
715 P Street
Sacramento, California 95814

Dear Ms. Lopez,

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE), collectively referred to herein as the California Investor-Owned Utilities (CA IOUs), in response to the California Energy Commission pre-rulemaking action regarding water closets—otherwise known as toilets.

The CA IOUs comprise some of the largest utility companies in the nation, serving over 32 million customers in the Western U.S. We are committed to helping customers reduce energy costs and consumption while striving to meet their evolving needs and expectations. Therefore, we advocate for standards that accurately reflect the climate and conditions of our respective service areas.

We respectfully submit the following comments to the California Energy Commission:

1. **The CA IOUs support the proposed 1.28 gallons per flush (gpf) full flush standard for tank-type dual-flush toilets.**

The proposed 1.28 gpf full flush standard is a practical and effective measure for achieving water efficiency while maintaining performance and consumer acceptance. This standard aligns with existing market trends and product availability, balancing sustainability goals and market readiness. The CA IOUs commend the California Energy Commission (CEC) for incorporating this standard into the proposal and encouraging its adoption as part of the broader efforts to improve water efficiency in California.

2. **The CA IOUs recommend that the CEC carefully re-evaluate the proposed 0.80 gpf reduced flush standard for tank-type dual-flush toilets to ensure it balances technical feasibility, market readiness, and consumer choice.**

The 2023 Title 20 Statewide CASE Report[1] supports a reduced flush rate of 0.90 gpf,[2] identifying it as both technically achievable and consistent with the availability of compliant models on the market. This

[1] California Energy Commission, "California Investor Owned Utilities Comments - Title 20 Water Closets CASE," Document TN# 252134, September 5, 2023, https://efiling.energy.ca.gov/GetDocument.aspx?tn=252134&DocumentContentId=87140.
[2] **Note**: This recommendation increases the significant figures from one to two to align with the requirements outlined in ASME 7.3.3(e).

standard offers water savings while maintaining diverse consumer product options. Based on findings from the United States (U.S.) Environmental Protection Agency (EPA) WaterSense database (January 2025), 72% (457 of 633) of the dual-flush models meet the 0.90 gpf threshold, whereas 28% (176) do not. In contrast, the proposed 0.80 gpf reduced flush standard risks significant market impacts, disqualifying approximately 46% (293 of 633) of the dual-flush WaterSense models. This standard would eliminate 86% of dual-flush tank-type toilets for sale in California based on certified models to the CEC's Modernized Appliance Efficiency Database System (MAEDbS). This reduction in compliant products could impede market readiness and restrict consumer options, undermining the proposal's intended benefits.

The CA IOUs urge the CEC to reassess the reduced flush standard and consider maintaining the 0.90 gpf threshold recommended in the 2023 Title 20 Statewide CASE Report[3] on water closets. This threshold would better align with market conditions and facilitate a smoother transition to the proposed regulations.

3. **The CA IOUs recommend that the CEC evaluate the potential impacts of the proposed 1.10 gpf standard for tank-type single-flush toilets in commercial applications to affirm the standard is practical and aligned with market conditions.**

A 1.10 gpf standard for tank-type single-flush toilets in residential settings, including new construction and existing stock, is unlikely to cause performance issues and could lead to water savings. However, implementing this standard may pose challenges in commercial settings due to differences in plumbing systems. In commercial facilities, toilet fixtures are frequently used to flush items like paper towels, toilet seat covers, and feminine hygiene products. Commercial drain lines typically have larger diameters and less steep slopes than residential lines. These systems often lack supplementary water flows found in residential environments, such as those from baths, showers, and clothes washers. In 2022, approximately 35% (2.6 million) of California's 7.3 million commercial toilet installations were tank-type models (see Table 1). The proposed standard could disproportionately impact these installations, leading to potential drain line performance issues. The CA IOUs concern for 1.10 gpf tank-type single-flush toilets in commercial settings excludes lodging establishments, such as hotels and motels, because they have similar duty factors to those in residential installations.

The CA IOUs researched ways to distinguish tank-type toilets in residential and commercial applications but could not identify a clear and consistent method. Although a building code could differentiate between residential and commercial applications and new and existing buildings, we recognize that this is outside the scope of this proceeding. Therefore, we recommend:

1. Updating research to collect data on potential impacts of lower flush volume tank-type toilets in commercial applications.
2. Explore establishing this requirement for residential new construction and renovations through the plumbing code.

[3] California Energy Commission, "California Investor Owned Utilities Comments - Title 20 Water Closets CASE," September 5, 2023.

Recommendations:

Commercial (Non-residential) Applications*:* To support the inclusion of a 1.10 gpf standard for commercial applications, the CA IOUs recommend:

- **Extend the Plumbing Efficiency Research Coalition (PERC)[4] study** to specifically address 1.10 gpf toilets and the flushing of paper and other products common to commercial installations.
- **Survey commercial facility managers** in California to collect data on the prevalence of tank-type low-volume toilets in commercial buildings and assess their experience, particularly regarding potential flushing issues or waste transport through the building drain lines.

Without additional research, the CA IOUs continue to support the recommendations outlined in the 2023 Title 20 Statewide CASE Report.[5]

Residential New Construction: Endorse the 1.10 gpf standard for residential new construction and renovations as part of the 2027 WE*Stand (submission deadline: March 3, 2025) and the 2030 Uniform Plumbing Code (UPC) to influence future updates to the California Plumbing Code.

Table 1: Breakdown of Tank-Type and Flushometer Toilets by Commercial Category

Category	Tank-Type	Flushometer	TOTAL	Percent of Category using Tank-Type Toilets (%)	Contribution to Tank-Type Total (%)
Lodging + Restaurants + Drinking Places	1,278,527	359,120	1,637,647	78%	49%
Retail + Wholesale	756,781	1,330,023	2,086,804	36%	29%
Places of Worship	234,174	96,638	330,812	71%	9%
Office + Mix Use	215,467	1,077,337	1,292,804	17%	8%
Health Care	55,989	8,935	64,924	86%	2%
Leisure & Entertainment	34,257	28,478	62,314	55%	1%
Federal, State and Municipal Buildings	2,908	5,948	8,856	33%	0%
Passenger Terminals	1,696	25,933	27,629	6%	0%
Public Safety	1,629	3,346	4,975	33%	0%
Utilities	1,527	3,132	4,659	33%	0%
Mining, Quarrying, Oil + Gas Extraction	807	1,656	2,463	33%	0%
Manufacturing	0	151,456	151,456	0%	0%
Industrial	0	151,031	151,031	0%	0%
Education	0	1,467,971	1,467,971	0%	0%
TOTAL	**2,584,000**	**4,710,000**	**7,300,000**	**35%**	

Source: GMP Research Inc., 2022. Plumbing Manufacturers International (PMI) commissioned this study, and these results are reproduced with permission from PMI.

[4] "Plumbing Efficiency Research Coalition Efficiency," https://plumbingefficiencyresearchcoalition.org/.
[5] California Energy Commission, "California Investor-Owned Utilities Comments - Title 20 Water Closets CASE," September 5, 2023.

4. **The CA IOUs recommend that the CEC collaborate with industry stakeholders to confirm that the proposed December 1, 2026, effective date provides sufficient time for the market to meet the new standards at scale.**

With the limited number of existing compliant products and the lengthy timelines for these rulemakings, the proposed one-year period may not be sufficient for manufacturers to adapt, develop, certify, and supply compliant products at scale and meet consumer expectations. While the CA IOUs have historically supported one-year effective dates, this proposal would eliminate 86% of dual-flush tank-type toilets and 87% of single-flush tank-type toilets, significant portions of the existing market.[6] Implementing a one-year effective date in this case would cause significant market disruption with little benefit to California consumers. The CA IOUs strongly encourage the CEC to gather data from industry stakeholders on supply chain timelines, number of manufacturers, product redesign schedules, testing and certification timelines, and shipping and distribution timelines. This information will help the CEC assess the feasibility of the December 1, 2026, effective date and ensure a smooth transition with minimal disruption.

5. **The CA IOUs recommend that the CEC use population projections as the primary metric for analyzing statewide water savings from toilets rather than new housing starts to provide a more accurate and relevant assessment of water use patterns and savings potential.**

Unlike hard-wired or plugged-in products, standards for water closets only save water with each flush. Instead of using stock turnover or housing starts, population projections are better for analyzing toilet water savings as they align more closely with the actual drivers of water demand. Population projections capture changes in the number of individuals using water fixtures, which directly correlate with overall water use. In contrast, new housing starts represent only a subset of water use factors, as they focus exclusively on the construction of new buildings.

By using population projections to estimate statewide water savings, the CEC can ensure a more accurate assessment of water savings opportunities. This approach incorporates assumptions from the previously docketed 2023 Title 20 Statewide CASE Report, including:

- **Population projections** data provided by the California Department of Finance
- **Natural replacement rate** based on a 25-year lifecycle for toilets
- **Market share** of dual-flush versus single-flush toilets
- **Savings per flush calculations** using a weighted average for dual-flush models
- **Naturally occurring market adoption** commonly referred to as NOMAD
- **Flush frequency** of five flushes per person per day
- **Embedded energy savings** derived from water savings

Together, these factors provide a comprehensive framework for assessing the potential impact of the proposed standards.

Appendix 1 of this letter contains the explicit code language change recommendations corresponding to the above comments.

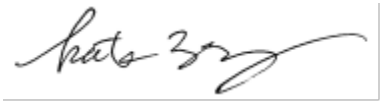
[6] Based on CEC Staff Report analysis of the MAEDbS certified toilets. Table 7-1, Table 7-3.

The CA IOUs appreciate the opportunity to provide these comments regarding the *Pre-Rulemaking on Appliance Efficiency Regulations for Water Closets*. We thank the California Energy Commission for its consideration and look forward to the next steps in the process.

Sincerely,

Rob Bohn
Manager, Codes & Standards
Pacific Gas and Electric Company

Christopher Malotte
Sr. Manager, Codes and Standards
Southern California Edison



Kate Zeng
ETP/C&S/ZNE Manager
Customer Programs
San Diego Gas & Electric Company

Appendix 1: Code Language Changes to the Appliance Efficiency Regulations (Title 20) based on Comment Recommendations

<table>
<tr><th>Code Section</th><th>Suggested Change</th></tr>
<tr><td>Section 1602</td><td>Update the tank-type definition to include a definition for “dual-flush water closet” in alignment with 10 CFR 430.2:

“Dual flush water closet” is a water closet incorporating a feature that allows the user to flush the water closet with either a reduced or a full volume of water.</td></tr>
<tr><td>Section 1605.3(i)(1) Table I-2</td><td>Ensure consistency and clarity by using the same number of decimal places for flush volume standards as shown in Table I-2.

Revise the term “Dual-Flush Water Closets” to “Water Closets with Dual Flush” to clarify that the reduced flush and full flush maximum volume standards apply to all water closets of the dual-flush type.

Update the recommendation to propose a reduced flush standard of 0.90 gpf instead of 0.80 gpf. See Comment 2.

Remove the proposed 1.10 gpf standard pending further research on impacts in commercial applications. See Comment 3.

<table>
<tr><th><u>Appliance</u></th><th><u>Maximum Flush Volume (gallons per flush)</u></th></tr>
<tr><td><u><s>Dual-Flush</s> Water Closets with Dual-Flush</u></td><td><u>Reduced Flush = 0.<s>8</s>90 gpf
Full Flush = 1.28 gpf</u></td></tr>
<tr><td><u><s>Blowout Water Closets and Flushometer Valve Water Closets</s> All other water closets</u></td><td><u>1.28 gpf</u></td></tr>
<tr><td><u><s>All other water closets</s></u></td><td><u><s>1.1 gpf</s></u></td></tr>
</table>
</td></tr>
<tr><td>Section 1605.3(i)(3)</td><td>Require that water closets manufactured on or after the proposed effective date pass new performance tests added in Section 1604(i)(1)(B), including granule and ball, surface wash, drain line transport characterization, overflow, and adjustability. Recommend that this be a True/False option in Table X (below).

Add section <u>1605.3(i)(3)</u>
<u>Water closets manufactured on or after [Effective Date] shall meet the performance requirements of ASME A112.19.2-2024/CSA B45.1-24:</u></td></tr>
</table>

<table>
<tr><td></td><td>(A) Section 7.5 Granule and ball test,
(B) Section 7.6 Surface wash test,
(C) Section 7.7 Drain line transport characterization test,
(D) 7.8 Overflow test (for gravity tank-type water closets only),
(E) 7.9 Waste extraction test,
(F) Section 7.12 or 7.13 Adjustability tests (for gravity tank-type water closets only)</td></tr>
<tr><td>Section 1606 Table X</td><td>Remove the first mention of dual flush water closets as a separate fixture type in Table X since the Flush Type row was added to indicate if the device is single or dual flush. The change allows a manufacturer to certify the water closet type and the flush type as separate characteristics. As an example, gravity tank type and flushometer valve water closets can be either single or dual flush. A manufacturer that chooses to use the dual flush water closet type would not indicate if the water closet were gravity tank or flushometer valve water closet.
<table>
<tr><td>I</td><td>Plumbing Fixtures</td><td>*Type</td><td>Blowout water closet, gravity tank type water closet, ~~dual-flush water closet,~~ ~~electromechanical hydraulic~~ power-assisted water closet, ~~flushometer tank~~ pressure-assisted water closet, prison-type urinal, prison-type water closet, flushometer valve water closet, trough-type urinal, wall-mounted urinal, waterless urinal, other type urinal, vacuum-assisted ~~type~~ water closet</td></tr>
<tr><td></td><td></td><td>*Water Closet Type</td><td>One-piece, Two-piece</td></tr>
<tr><td></td><td></td><td>*Flush Type (water closets only)</td><td>Single, Dual</td></tr>
</table></td></tr>
</table>

<table>
<tr>
<td>Section 1606 Table X</td>
<td>Add following certification requirements for all water closet types.

The certifications will ensure enforceability of requirements added to section 1604(i)(1)(B).

<table>
<tr>
<td>Meets the performance requirements in 1604(i)(1)(B) (for all water closets)</td>
<td>True, False</td>
</tr>
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